IN THE CLAIMS:

1. (Currently Amended) A spaced-based server network architecture which permits on demand transfer of data between a client satellite in an orbit about earth and an earth station irrespective of the location of the client satellite relative to the earth station, the space-based server architecture comprising:

a) a plurality of client satellites located in one or more earth orbits;

b) a plurality of server satellites located spaced apart in at least one earth orbit and being sufficient in number to provide substantially total world-wide communications coverage to and connectivity with designated and authorized earth stations and said plurality of client satellites, said at least one earth orbit of said server satellites being higher than said one or more earth orbits of said client satellites, each of said server satellites including:

i) communications downlink means for providing intercommunications with designated and authorized earth stations within its field of view;

ii) communications crosslink means for providing intercommunications with other server satellites within its field of view;

iii) communications link means for providing intercommunications with a client satellite within its field of view; [and]

iv) a processor configured to 1) determine data routing and management information including information relating to one or more server satellites, if any, to be used for data transmissions between a client satellite and an earth station, and 2) generate pre-processed data and processed data and forward one of the pre-processed data, the processed data and unprocessed data to one of the designated and authorized earth stations; and

v) a memory configured to store the pre-processed data, the processed data and the unprocessed data; and

c) [whereby] wherein when control data for a particular client satellite originating from [an] a corresponding earth station is passed directly from the corresponding earth station to an accessible server satellite within its terrestrial communications link field of view, the processor associated with [and] said accessible server satellite determines the

appropriate data routing and management information and, based on such data routing and management information, [in turn,]either passes said control data [either] directly to said particular client satellite over said communications link means if within its communications field of view, or transmits said control data over said communications crosslink means to a server satellite having direct communications access to either said particular client satellite or another server satellite that is capable of communicating with said particular client satellite; and

d) [whereby] wherein when [each] the particular client satellite [can at any time] transmits its mission data to a corresponding[designated] earth station, irrespective of its location on earth, [by transmitting said mission data] over said communications link means to [a]the accessible server satellite within its communication field of view, the processor associated with the accessible server satellite determines the appropriate data routing and management information and, based on such data routing and management information, either [which, in turn,] passes said mission data [either] directly to the corresponding[designated] earth station over said communications downlink means if within its communications field of view, or transmits said mission data over said communications crosslink means to a server satellite having communications downlink access to either the corresponding[designated] earth station or another server satellite that is capable of communicating with said corresponding earth station.

2. (Original) A space-based server network architecture as in claim 1, wherein said communications downlink means comprise a high frequency band spot bean antenna sufficient to provide jam-resistant communications.

3. (Original) A space-based server network architecture as in claim 1, wherein said communications crosslink means comprises a wide-band optical laser communications link.

4. (Original) A space-based server network architecture as in claim 1, wherein said communications crosslink means comprises a radio frequency communications link.

5. (Original) A space-based server network architecture as in claim 1, wherein said communications link means comprises a W-band communications link.

6. (Original) A space-based server network architecture as in claim 5, wherein said communications link means further includes an omni RF communications link to ensure tracking capability and connectivity between a server satellite and a client satellite during initial launch and orbit insertion of said client satellite and in the event of tumbling or partial loss of attitude stabilization of said client satellite.

7. (Original) A space-based server network architecture as in claim 1, wherein each of said server satellites includes high capacity onboard memory sufficient for cache storage or longer term storage of earth station generated communications data.

8. (Original) A space-based server network architecture as in claim 1, wherein said server satellites include communications links oriented pointed upwards towards said server satellites.

9. (Original) A space-based server network architecture as in claim 1, wherein:

(a) said server satellites are placed in geosynchronous orbit; and

(b) said client satellites are placed in either one of a low or medium earth orbit.

10. (Currently Amended) A spaced-based server network architecture which permits on demand transfer of data between a client satellite in an orbit about earth and an earth station irrespective of the location of the client satellite relative to the earth station, the space-based server architecture comprising:

a) at least one earth station;

b) a plurality of client satellites located in one or more earth orbits;

b) a plurality of server satellites located spaced apart in at least one earth orbit and being sufficient in number to provide substantially total world-wide communications coverage to and connectivity with designated and authorized earth stations and said plurality of client satellites, said at least one earth orbit of said server satellites being higher than said one or more earth orbits of said client satellites, each of said server satellites including:

i) communications downlink means for providing intercommunications with said at least one earth station;

ii) communications crosslink means for providing intercommunications with other server satellites within its field of view;

iii) communications link means for providing intercommunications with a client satellite within its field of view; [and]

iv) a processor configured to 1) determine data routing and management information including information relating to one or more server satellites, if any, to be used for data transmissions between a client satellite and said at least one earth station, and 2) generate pre-processed data and processed data and forward one of the pre-processed data, the processed data and unprocessed data to said at least one earth station; and

v) a memory configured to store the pre-processed data, the processed data and the unprocessed data; and

c) [whereby] wherein when control data for a particular client satellite originating from said at least one earth station is passed directly from said at least one earth station to an accessible server satellite within its terrestrial communications link field of view, the processor associated with [and] said accessible server satellite determines the appropriate data routing and management information and, based on such data routing and management information, [in turn,]either passes said control data [either] directly to said particular client satellite over said communications link means if within its communications field of view, or transmits said control data over said communications crosslink means to a server satellite having direct communications access to either said particular client satellite or another server satellite that is capable of communicating with said particular client satellite; and

d) [whereby] wherein when [each] the particular client satellite [can at any time] transmits its mission data to said at least one earth station, irrespective of its location on earth, [by transmitting said mission data] over said communications link means to [a]the accessible server satellite within its communication field of view, the processor associated with the accessible server satellite determines the appropriate data routing and management

information and, based on such data routing and management information, either [which, in turn,] passes said mission data [either] directly to said at least one earth station over said communications downlink means if within its communications field of view, or transmits said mission data over said communications crosslink means to a server satellite having communications downlink access to either [the designated] said at least one earth station or another server satellite that is capable of communicating with said at least one earth station.

11. (Original) A space-based server network architecture as in claim 10, wherein said communications downlink means comprise a high frequency band spot bean antenna sufficient to provide jam-resistant communications.

12. (Original) A space-based server network architecture as in claim 10, wherein said communications crosslink means comprises a wide-band optical laser communications link.

13. (Original) A space-based server network architecture as in claim 10, wherein said communications crosslink means comprises a radio frequency communications link.

14. (Original) A space-based server network architecture as in claim 10, wherein said communications link means comprises a W-band communications link.

15. (Original) A space-based server network architecture as in claim 14, wherein said communications link means further includes an omni RF communications link to ensure tracking capability and connectivity between a server satellite and a client satellite during initial launch and orbit insertion of said client satellite and in the event of tumbling or partial loss of attitude stabilization of said client satellite.

16. (Original) A space-based server network architecture as in claim 10, wherein said server satellites include communications links oriented pointed upwards towards said server satellites.

17. (Original) A space-based server network architecture as in claim 10, wherein:

(a) said server satellites are placed in geosynchronous orbit; and

(b) said client satellites are placed in either one of a low or medium earth orbit.

18. (Original) A space-based server network architecture as in claim 10, wherein said at least one earth station comprises land-based, sea-based and airborne platforms.

19. (Currently amended) A space-based server network architecture comprising:

(a) a client;

(b) a server satellite system located in earth orbit, said server satellite system comprising a plurality of satellites, each satellite including:

(i) communications downlink means for providing intercommunication with designated and authorized earth stations within its field of view;

(ii) communications link means for providing intercommunication with a client within its field of view; [and]

(iii) a processor configured to (1) determine data routing and management information including information relating to one or more satellites, if any, to be used for data transmissions between the client and an earth station, and (2) generate pre-processed data and processed data and forward one of the pre-processed data, the processed data and unprocessed data to one of the designated and authorized earth stations; and

(iv) a memory configured to store the pre-processed data, the processed data and the unprocessed data; and

(c) [whereby] wherein when said client [can at any time can] transmits mission data to or receives mission data from a designated earth station, irrespective of its location on earth, [by communicating] over said communications link means with at least one of the satellites of the server satellite system within the client's communication field of view, the processor associated with the at least one of the satellites of the server satellite system determines the appropriate data routing and management information, and based on such data routing and management information,[which the server satellite system, in turn,] communicates with either the designated earth station over said communications downlink means or another satellite that is capable of communicating with the client.

20. (Previously added) A space-based server network architecture as in claim 19, wherein said communications downlink means comprise a high frequency band spot beam antenna sufficient to provide jam-resistant communications.

21. (Previously added) A space-based server network architecture as in claim 19, wherein said communications link means comprises a radio frequency communications link.

22. (Previously added) A space-based server network architecture as in claim 19, wherein said communications link means comprises a W-band communications link.

23. (Previously amended) A space-based server network architecture as in claim 19, wherein said client comprises is a client satellite in earth orbit.

24. (Previously amended) A space-based server network architecture as in claim 23, wherein said communications link means further includes an omni RF communications link to ensure tracking capability and connectivity between said server satellite system and said client satellite during initial launch and orbit insertion of said client satellite and in the event of tumbling or partial loss of attitude stabilization of said client satellite.

25. (Previously amended) A space-based server network architecture as in claim 23, wherein:

(a) said server satellite system is located placed in geosynchronous orbit; and

(b) said client satellite is located placed in either one of a low or a medium earth orbit.

26. (Currently amended) A space-based server network architecture as in claim 19, wherein said memory [server satellite system] includes high capacity onboard memory sufficient for cache storage or longer term storage of earth station generated or client generated communications data.

27. (Previously amended) A space-based server network architecture as in claim 19, wherein said client includes communications links oriented pointed upwards towards said server satellite system.

28. (Previously added) The space-based server network architecture of claim 19, wherein the client comprises an airborne platform.

29. (Previously added) The space-based server network architecture of claim 19, wherein the client comprises an exo-atmospheric platform.

30. (Previously added) The space-based server network architecture of claim 19, wherein the earth station comprises a fixed-location ground station.

31. (Previously added) The space-based server network architecture of claim 19, wherein the earth station comprises a mobile ground station.

32. (Previously amended) The space-based server network architecture of claim 19, wherein the earth station comprises a sea-based sea platform.

33. (Currently amended) A space-based server network architecture comprising:

(a) a plurality of clients;

(b) a plurality of server satellites located in one or more earth orbits, each of said server satellites including:

(i) communications downlink means for providing intercommunication with designated and authorized earth stations within its field of view;

(ii) communications crosslink means for providing intercommunication with other server satellites within its field of view;

(iii) communications link means for providing intercommunication with a client within its field of view; [and]

(iv) a processor configured to (1) determine data routing and management information including information relating to one or more server satellites, if any, to be used for data transmissions between a client and an earth station, and (2) generate pre-processed data and processed data and forward one of the pre-processed data, the processed data and unprocessed data to one of the designated and authorized earth stations; and

(iv) a memory configured to store the pre-processed data, the processed data and the unprocessed data; and

(c) [whereby] wherein when each of the plurality of clients [can at any time can] transmits its mission data to or receives data from a designated earth station, irrespective of its location on earth, by communicating over said communications link means with at least one of the plurality of server satellites within its communication field of view, the processor associated with the at least one of the plurality of server satellites determines the appropriate data routing and management information and, based on such data routing and management information, [which, in turn,]communicates with either the designated earth station over said communications downlink means if the designated earth station is in the field of view of the at least one of the plurality of server satellites or another server satellite that is capable of communicating with the designated earth station.

34. (Previously added) A space-based server network architecture as in claim 33, wherein said communications downlink means comprise a high frequency band spot beam antenna sufficient to provide jam-resistant communications.

35. (Previously added) A space-based server network architecture as in claim 33, wherein said communications crosslink means comprises a wide-band optical laser communications link.

36. (Previously added) A space-based server network architecture as in claim 33, wherein said communications crosslink means comprises a radio frequency communications link.

37. (Previously added) A space-based server network architecture as in claim 33, wherein said communications link means comprises a W-band communications link.

38. (Previously amended) A space-based server network architecture as in claim 33, wherein the plurality of clients comprise one or more client satellites in one or more earth orbits.

39. (Currently amended) A space-based server network architecture as in claim 38, wherein said communications link means further includes an omni RF communications link

to ensure tracking capability and connectivity between said server satellites and the one or more client satellites during initial launch and orbit insertion of the one or more client satellites and in the event of tumbling or partial loss of attitude stabilization of the one or more [more] client satellites.

40. (Currently amended) A space-based server network architecture as in claim 38, wherein:

(a) each of the plurality of server satellites [are] is placed in geosynchronous orbit; and

(b) each of the one or more client satellites is placed in either one of a low or medium earth orbit.

41. (Currently amended) A space-based server network architecture as in claim 33, wherein the memory of each of the plurality of server satellites includes onboard memory sufficient for cache storage or longer term storage of earth station generated or client generated communications data.

42. (Previously amended) A space-based server network architecture as in claim 33, wherein at least one of the plurality of clients includes communications links oriented painted upwards towards one or more of the plurality of server satellites.

43. (Previously amended) A space-based server network architecture as in claim 33, wherein each of the plurality of clients include communications links oriented towards one or more of the plurality of server satellites.

44. (Previously amended) The space-based server network architecture of claim 33, wherein one or more of the plurality of clients comprise an airborne platform.

45. (Previously amended) The space-based server network architecture of claim 33, wherein one or more of the plurality of clients comprise an exo-atmospheric platform.

46. (Previously added) The space-based server network architecture of claim 33, wherein the earth station comprises a fixed-location ground station.

47. (Previously added) The space-based server network architecture of claim 33, wherein the earth station comprises a mobile ground station.

48. (Previously amended) The space-based server network architecture of claim 33, wherein the earth station comprises a sea-based sea platform.

49. (Currently amended) A space-based server network architecture comprising:

(a) at least one earth station;

(b) a client;

(c) a server satellites system located in earth orbit, said server satellites system comprising a plurality of satellites, each satellite including:

(i) communications downlink means for providing intercommunication with said at least one earth station;

(ii) communications link means for providing intercommunication with a client within its field of view; [and]

(iii) a processor configured to (1) determine data routing and management information including information relating to one or more satellites, if any, to be used for data transmissions between the client and the at least one earth station, and (2) generate pre-processed data and processed data and forward one of the pre-processed data, the processed data and unprocessed data to one of the at least one earth stations; and

(iv) a memory configured to store the pre-processed data, the processed data and the unprocessed data; and

(d) [whereby] wherein when said client [at any time can] transmits data to said at least one earth station, irrespective of its location on earth, [by transmitting the data] over said communications link means of at least one of the satellites of the server satellites system within its communication field of view, the processor associated with the at least one of the satellites of [which] the server satellites system determines the appropriate data routing and management information and, based on such data routing and management information, [in turn,] transmits the data to either said at least one earth station over said communications

downlink means or another satellite that is capable of communicating with said at least one earth station.

50. (Previously added) A space-based server network architecture as in claim 49, wherein said communications downlink means comprise a high frequency band spot beam antenna sufficient to provide jam-resistant communications.

51. (Previously added) A space-based server network architecture as in claim 49, wherein said communications link means comprises a W-band communications link.

52. (Previously added) A space-based server network architecture as in claim 49, wherein said client is a client satellite in earth orbit.

53. (Previously amended) A space-based server network architecture as in claim 52, wherein said communications link means further includes an omni RF communications link to ensure tracking capability and connectivity between the server satellite system and a client satellite during initial launch and orbit insertion of said client satellite and in the event of tumbling or partial loss of attitude stabilization of said client satellite.

54. (Previously amended) A space-based server network architecture as in claim 52, wherein:

(a) said server satellite system is located in geosynchronous orbit; and

(b) said client satellite is located in either one of a low or a medium earth orbit.

55. (Previously amended) A space-based server network architecture as in claim 49, wherein said client includes communications links oriented towards said server satellite system.

56. (Previously Amended) A space-based server network architecture as in claim 49, wherein said at least one earth station comprises a land-based, a sea-based or an airborne platforms.

57. (Currently amended) A space-based server network architecture comprising:

(a) at least one earth station;

(b) a plurality of clients;

(c) a plurality of server satellites located spaced apart in at least one earth orbit, each of said server satellites including:

(i) communications downlink means for providing intercommunication with said at least one earth station;

(ii) communications crosslink means for providing intercommunications with other server satellites within its field of view;

(iii) communications link means for providing intercommunication with a client within its field of view; [and]

(iv) a processor configured to (1) determine data routing and management information including information relating to one or more server satellites, if any, to be used for data transmissions between a client and the at least one earth station, and (2) generate pre-processed data and processed data and forward one of the pre-processed data, the processed data and unprocessed data to the at least one earth stations; and

(iv) a memory configured to store the pre-processed data, the processed data and the unprocessed data; and

(d) [whereby]wherein when each client [can at any time can] transmits data to said at least one earth station, irrespective of its location on earth, [by transmitting the data] over said communications link means to [at least one of the plurality of] a server satellite[s] within its communication field of view, the processor associated with the server satellite determines the appropriate data routing and management information and, based on such data routing and management information,[which, in turn,] transmits the data to either said at least one earth station over said communications downlink means if [the designated]said at least one earth station is in the field of view of [at least one of the plurality of]the server satellite[s] or another server satellite that is capable of communicating with said at least one earth station.

58. (Previously added) A space-based server network architecture as in claim 57, wherein said communications downlink means comprise a high frequency band spot beam antenna sufficient to provide jam-resistant communications.

59. (Previously added) A space-based server network architecture as in claim 57, wherein said communications crosslink means comprises a wide-band optical laser communications link.

60. (Previously added) A space-based server network architecture as in claim 57, wherein said communications crosslink means comprises a radio frequency communications link.

61. (Previously added) A space-based server network architecture as in claim 57, wherein said communications link means comprises a W-band communications link.

62. (Previously amended) A space-based server network architecture as in claim 57, wherein the plurality of clients comprise one or more client satellites in earth orbit.

63. (Previously amended) A space-based server network architecture as in claim 62, wherein said communications link means further includes an omni RF communications link to ensure tracking capability and connectivity between the server satellites and the one or more client satellite during initial launch and orbit insertion of the one or more client satellites and in the event of tumbling or partial loss of attitude stabilization of the one or more client satellites.

64. (Previously amended) A space-based server network architecture as in claim 62, wherein:

(a) each of the plurality of server satellites are placed in geosynchronous orbit; and

(b) the one or more client satellites are placed in either one of a low or medium earth orbit.

65. (Previously amended) A space-based server network architecture as in claim 57, wherein said plurality of clients include communications links oriented towards one or more of the plurality of server satellites.

66. (Previously amended) A space-based server network architecture as in claim 57, wherein said at least one earth station comprises a land-based, a sea-based or an airborne platforms.

67. (Currently Amended) A space-based server network architecture comprising:

a client;

a server satellite located in earth orbit, comprising a processor operable to process a network protocol;

a first communications link operable to provide intercommunications between the server satellite and the client using a network protocol; and

a second communications link operable to provide intercommunications between the server satellite and an earth station using a network protocol; and

wherein the server satellite is operable to intercommunicate data between the client and the earth station;

wherein the processor is further operable to determine data routing and management information including information relating to one or more other server satellites, if any, to be used for data transmissions between the client and the earth station; and

wherein the processor is further operable to use the data routing and management information to communicate with either the client or the one or more other server satellites to complete data transmissions between the client and the earth station.

68. (Previously added) The space-based server network architecture of claim 67, wherein the client comprises a client satellite in earth orbit.

69. (Previously added) The space-based server network architecture of claim 68, wherein the earth orbit of the client satellite is below the earth orbit of the server satellite.

70. (Previously added) The space-based server network architecture of claim 67, wherein the client comprises an airborne platform.

71. (Previously added) The space-based server network architecture of claim 67, wherein the client comprises an exo-atmospheric platform.

72. (Previously added) The space-based server network architecture of claim 67, wherein the earth station comprises a fixed-location ground station.

73. (Previously added) The space-based server network architecture of claim 67, wherein the earth station comprises a mobile ground station.

74. (Previously amended) The space-based server network architecture of claim 67, wherein the earth station comprises a sea-based platform.

75. (Previously amended) The space-based server network architecture of claim 67, wherein the network protocol comprises a form of transmission control protocol/internet protocol (TCP/IP).

76. (Previously amended) The space-based server network architecture of claim 67, wherein the network protocol comprises a form of Space Communications Protocol Standards-Transport Protocol (SCPS-TP).

77. (Previously added) The space-based server network architecture of claim 67, wherein the earth station comprises an airborne platform.

78. (Previously amended) The space-based server network architecture of claim 67, further comprising a plurality of clients operable to intercommunicate data over communications links between the plurality of clients and the server satellites, and wherein the server satellite is further operable to provide intercommunications among the plurality of clients using a network protocol.

79. (Previously added) The space-based server network architecture of claim 78, wherein at least one client comprises a client satellite in earth orbit.

80. (Previously amended) The space-based server network architecture of claim 79, wherein the earth orbit of the at least one client satellite is below the earth orbit of the server satellite.

81. (Previously added) The space-based server network architecture of claim 78, wherein at least one client comprises an airborne platform.

82. (Previously added) The space-based server network architecture of claim 78, wherein at least one client comprises an exo-atmospheric platform.

83. (Previously Amended) The space-based server network architecture of claim 67, further comprising:

a plurality of server satellites; and

server communications links operable to provide intercommunications among the plurality of server satellites using a network protocol; and

wherein the plurality of server satellites are further operable to intercommunicate data among the client, the earth station, and the plurality of server satellites.

84. (Previously Amended) The space-based server network architecture of claim 83, further comprising:

a plurality of clients operable to intercommunicate data over communications links between the plurality of clients and one or more of the plurality of server satellites; and

wherein the plurality of server satellites are further operable to provide intercommunications using a network protocol among the plurality of clients, the earth station, and the plurality of server satellites.

85. (Previously amended) The space-based server network architecture of claim 84, further comprising:

a plurality of earth stations operable to intercommunicate data over communications links between the plurality of earth stations and one or more of the plurality of server satellites; and

wherein the plurality of server satellites are further operable to provide intercommunications using a network protocol among the plurality of clients, the plurality of earth station, and the plurality of server satellites.

86. (Previously added) The space-based server network architecture of claim 85, wherein at least one client comprises a client satellite in earth orbit.

87. (Previously amended) The space-based server network architecture of claim 86, wherein the earth orbit of the at least one client satellite is below the earth orbit of the server satellite.

88. (Previously amended) The space-based server network architecture of claim 85 wherein at least one client comprises an airborne platform.

89. (Previously amended) The space-based server network architecture of claim 85 wherein at least one client comprises an exo-atmospheric platform.

90. (Previously amended) The space-based server network architecture of claim 85 wherein the network protocol comprises a form of transmission control protocol/internet protocol (TCP/IP).

91. (Previously amended) The space-based server network architecture of claim 85 wherein the network protocol comprises a form of Space Communications Protocol Standards-Transport Protocol (SCPS-TP).

92. (Previously amended) The space-based server network architecture of claim 85 wherein at least one earth station comprises a fixed-location ground station.

93. (Previously amended) The space-based server network architecture of claim 85 wherein at least one earth station comprises a mobile ground station.

94. (Previously amended) The space-based server network architecture of claim 85 wherein at least one earth station comprises a sea-based platform.

95. (Previously amended) The space-based server network architecture of claim 85 wherein at least one earth station comprises an airborne platform.

96. (Currently amended) A server satellite located in earth orbit comprising:

a first communications link operable to provide intercommunications using a network protocol with a client; [and]

a second communications link operable to provide intercommunications using a network protocol with an earth station;

a processor configured to (1) determine data routing and management information including information relating to one or more other server satellites, if any, to be used for data transmissions between the client and the earth station, and (2) generate pre-processed data and processed data and forward one of the pre-processed data, the processed data and unprocessed data to the earth stations;

a memory configured to store the pre-processed data, the processed data and the unprocessed data; and

wherein the server satellite is operable to intercommunicate data between the client and the earth station using the data routing and management information via the one or more other server satellites, if any.

97. (Previously amended) The server satellite of claim 96, wherein the first communications link comprises a plurality of communications links, and wherein the first communications link is further operable to intercommunicate data with a plurality of clients over the plurality of communications links, and wherein the server satellite is further operable to provide intercommunications using a network protocol with the plurality of clients.

98. (Previously amended) The server satellite of claim 97, wherein the second communications link comprises a plurality of communications links, and wherein the second communications link is further operable to provide intercommunications using a network protocol with a plurality of earth stations over the plurality of communications links and wherein the server satellite is further operable to provide intercommunications using a network protocol among the plurality of clients and the plurality earth stations.

99. (Previously added) The server satellite of claim 96, wherein at least one client comprises a client satellite in earth orbit.

100. (Previously added) The server satellite of claim 99, wherein the earth obit of the client satellite is below the earth orbit of the server satellite.

101. (Previously added) The server satellite of claim 96, wherein at least one client comprises an airborne platform.

102. (Previously added) The server satellite of claim 96, wherein at least one client comprises an exo-atmospheric platform.

103. (Previously amended) The server satellite of claim 96, wherein the network protocol comprises a form of transmission control protocol/internet protocol (TCP/IP).

104. (Previously amended) The server satellite of claim 96, wherein the network protocol comprises a form of Space Communications Protocol standards-Transport Protocol (SCPS-TP).

105. (Previously added) The server satellite of claim 96, wherein at least one earth station comprises a fixed-location ground station.

106. (Previously added) The server satellite of claim 96, wherein at least one earth station comprises a mobile ground station.

107. (Previously amended) The server satellite of claim 96, wherein at least one earth station comprises a sea-based platform.

108. (Previously added) The server satellite of claim 96, wherein at least one earth station comprises an airborne platform.

109. (Currently amended) A method of communicating using a space-based server network architecture comprising the steps of:

intercommunicating between a client and an earth station by performing the steps of: intercommunicating between a client and a server satellite located in earth orbit using a network protocol over a first communications link;

directing the server satellite to determine data routing and management information including information relating to one or more other server satellites, if any, to be used for data transmissions between the client and the earth station; and

intercommunicating between the server satellite and an earth station using a network protocol over a second communications link, the data routing and management information and the one or more other server satellites, if any.

110. (Previously added) The method of claim 109, wherein the client comprises a client satellite in earth orbit.

111. (Previously added) The method of claim 110, wherein the earth obit of the client satellite is below the earth orbit of the server satellite.

112. (Previously added) The method of claim 109, wherein the client comprises an airborne platform.

113. (Previously added) The method of claim 109, wherein the client comprises an exo-atmospheric platform.

114. (Previously amended) The method of claim 109, wherein the network protocol comprises a form of transmission control protocol/internet protocol (TCP/IP).

115. (Previously amended) The method of claim 109, wherein the network protocol comprises a form of Space Communications Protocol Standards-Transport Protocol (SCPS-TP).

116. (Previously added) The method of claim 109, wherein the earth station comprises a fixed-location ground station.

117. (Previously added) The method of claim 109, wherein the earth station comprises a mobile ground station.

118. (Previously amended) The method of claim 109, wherein the earth station comprises a sea-based platform.

119. (Previously added) The method of claim 109, wherein the earth station comprises an airborne platform.

120. (Currently amended) The method of claim 109, further comprising the step of:

intercommunicating among a plurality of clients via the server satellite using a network protocol over communications links between the plurality of clients and the server satellite[s].

121. (Previously added) The method of claim 120, wherein at least one client comprises a client satellite in earth orbit.

122. (Previously added) The method of claim 121, wherein the earth obit of the client satellite is below the earth orbit of the server satellite.

123. (Previously added) The method of claim 120, wherein at least one client comprises an airborne platform.

124. (Previously added) The method of claim 120, wherein at least one client comprises an exo-atmospheric platform.

125. (Previously added) The method of claim 109, further comprising the step of:

intercommunicating among a plurality of clients and a plurality of server satellites using a network protocol.

126. (Previously amended) The method of claim 125, further comprising the step of:

intercommunicating among the plurality of server satellites using a network protocol over communication links between the plurality of server satellites.

127. (Previously added) The method of claim 126, further comprising the step of:

intercommunicating among the plurality of clients, the plurality of server satellites, and the earth station using a network protocol.

128. (Previously added) The method of claim 127, further comprising the step of:

intercommunicating among the plurality of clients, the plurality of server satellites and a plurality of earth stations using a network protocol.

129. (Previously added) The method of claim 128, wherein at least one client comprises a client satellite in earth orbit.

130. (Previously added) The method of claim 129, wherein the earth obit of the client satellite is below the earth orbit of the server satellite.

131. (Previously added) The method of claim 128, wherein at least one client comprises an airborne platform.

132. (Previously added) The method of claim 128, wherein at least one client comprises an exo-atmospheric platform.

133. (Previously amended) The method of claim 128, wherein the network protocol comprises a form of transmission control protocol/internet protocol (TCP/IP).

134. (Previously amended) The method of claim 128, wherein the network protocol comprises a form of Space Communications Protocol Standards-Transport Protocol (SCPS-TP).

135. (Previously added) The method of claim 128, wherein at least one earth station comprises a fixed-location ground station.

136. (Previously added) The method of claim 128, wherein at least one earth station comprises a mobile ground station.

137. (Previously added) The method of claim 128, wherein at least one earth station comprises a sea platform.

138. (Previously added) The method of claim 128, wherein at least one earth station comprises an airborne platform.

139. (Previously added) The space-based server network architecture of claim 19, wherein the earth station comprises an airborne platform.

140. (Previously added) The space-based server network architecture of claim 19, wherein the architecture can be used for commercial or military applications.

141. (Previously added) The space-based server network architecture of claim 19, wherein the server satellite system is located in medium earth orbit.

142. (Previously added) The space-based server network architecture of claim 19, wherein the communications downlink means and the communications link means utilize the TCP/IP protocol.

143. (Previously added) The space-based server network architecture of claim 19, wherein the communications downlink means and the communications link means utilize a modified TCP/IP standard space network protocol format.

144. (Previously added) The space-based server network architecture of claim143, wherein modified TCP/IP standard space network protocol format comprises a form of Space Communications Protocol Standards-Transport Protocol (SCPS-TP).

145. (Previously added) The space-based server network architecture of claim 19, wherein at least one of the satellites of the server satellite system is placed in geosynchronous orbit over a protected location.

146. (Previously added) The space-based server network architecture of claim 33, wherein the communications link means comprises a radio frequency communications link.

147. (Previously added) The space-based server network architecture of claim 33, wherein the earth station comprises an airborne platform.

148. (Previously added) The space-based server network architecture of claim 33, wherein the architecture can be used for commercial or military applications.

149. (Previously added) The space-based server network architecture of claim 33, wherein one or more or the plurality of server satellites are located in medium earth orbit.

150. (Previously added) The space-based server network architecture of claim 33, wherein the communications downlink means, the communications crosslink means and the communications link means utilize the TCP/IP protocol.

151. (Previously added) The space-based server network architecture of claim 33, wherein the communications downlink means, the communications crosslink means, and the communications link means utilize a modified TCP/IP standard space network protocol format.

152. (Previously added) The space-based server network architecture of claim 151, wherein modified TCP/IP standard space network protocol format comprises a form of Space Communications Protocol Standards-Transport Protocol (SCPS-TP).

153. (Previously added) The space-based server network architecture of claim 33, wherein the plurality of clients can communicate with other of the plurality of clients via the plurality of server satellites.

154. (Previously added) The space-based server network architecture of claim 33, wherein if the designated earth station is not in the field of view of the at least one of the plurality of server satellites, the at least one of the plurality of server satellites communicates over communications crosslink means with one or more of the other of the plurality of server satellites which, in turn, communicates over communications downlink means with the designated earth station.

155. (Previously added) The space-based server network architecture of claim 33, wherein at least one of the satellites of the server satellite system is placed in geosynchronous orbit over a protected location.

156. (Previously added) The space-based server network architecture of claim 49, wherein the communications link means comprises a radio frequency communications link.

157. (Previously added) The space-based server network architecture of claim 49, wherein the client comprises an exo-atmospheric platform or an airborne platform.

158. (Previously added) The space-based server network architecture of claim 49, wherein the architecture can be used for commercial or military applications.

159. (Previously added) The space-based server network architecture of claim 49, wherein one or more or the plurality of server satellites are located in medium earth orbit.

160. (Previously added) The space-based server network architecture of claim 49, wherein the communications downlink means and the communications link means utilize the TCP/IP protocol.

161. (Previously added) The space-based server network architecture of claim 49, wherein the communications downlink means and the communications link means utilize a modified TCP/IP standard space network protocol format.

162. (Previously added) The space-based server network architecture of claiml61, wherein modified TCP/IP standard space network protocol format comprises a form of Space Communications Protocol Standards-Transport Protocol (SCPS-TP).

163. (Previously added) The space-based server network architecture of claim 49, wherein at least one of the satellites of the server satellite system is placed in geosynchronous orbit over a protected location.

164. (Previously added) The space-based server network architecture of claim 57, wherein the communications link means comprises a radio frequency communications link.

165. (Previously added) The space-based server network architecture of claim 57, wherein the plurality of clients comprise one or more of a satellite, an exo-atmospheric platform, an airborne platform, or any combination of a satellite, an exo-atmospheric platform, and an airborne platform.

166. (Previously added) The space-based server network architecture of claim 57, wherein the architecture can be used for commercial or military applications.

167. (Previously added) The space-based server network architecture of claim 57, wherein one or more or the plurality of server satellites are located in medium earth orbit.

168. (Previously added) The space-based server network architecture of claim 57, wherein the communications downlink means, the communications crosslink means and the communications link means utilize the TCP/IP protocol.

169. (Previously added) The space-based server network architecture of claim 57, wherein the communications downlink means, the communications crosslink means, and the communications link means utilize a modified TCP/IP standard space network protocol format.

170. (Previously added) The space-based server network architecture of claim169, wherein modified TCP/IP standard space network protocol format comprises a form of Space Communications Protocol Standards-Transport Protocol (SCPS-TP).

171. (Previously added) The space-based server network architecture of claim 57, wherein the plurality of clients can communicate with other of the plurality of clients via the plurality of server satellites.

172. (Previously added) The space-based server network architecture of claim 57, wherein if the designated earth station is not in the field of view of the at least one of the plurality of server satellites, the at least one of the plurality of server satellites communicates over communications crosslink means with one or more of the other of the plurality of server satellites which, in turn, communicates over communications downlink means with the designated earth station.

173. (Previously added) The space-based server network architecture of claim 57, wherein at least one of the satellites of the server satellite system is placed in geosynchronous orbit over a protected location.

174. (Previously added) The space-based server network architecture of claim 83, wherein the plurality of server satellites are communication with each other and configured such that the client can communicate with the earth station at any time irrespective of the earth station's location on earth.

175. (Previously added) The space-based server network architecture of claim 96, further comprising a plurality of server satellites in communication with each other and configured such that the client can communicate with the earth station at any time irrespective of the earth station's location on earth.

176. (Previously added) The space-based server network architecture of claim 175, further comprising a plurality of clients in communication with one or more of the plurality of server satellites, the plurality of server satellites configured to facilitate communication among the plurality of clients.

177. (Previously added) The space-based server network architecture of claim 176, wherein at least one of the plurality of clients comprises a client satellite in earth orbit.

178. (Previously added) The space-based server network architecture of claim 177, wherein the earth orbit of the client satellite is below the earth orbit of the plurality of server satellites.

179. (Previously added) The space-based server network architecture of claim 176, wherein at least one of the plurality of clients comprises an airborne platform.

180. (Previously added) The space-based server network architecture of claim 176, wherein at least one of the plurality of clients comprises an exo-atmospheric platform.

181. (Previously added) The space-based server network architecture of claim 176, further comprising a plurality of earth stations in communication with one or more of the plurality of server satellites, the plurality of server satellites configured to facilitate communication among the plurality of clients, the plurality of earth stations and the plurality of server satellites.

182. (Previously added) The space-based server network architecture of claim 181, wherein at least one of the plurality of earth stations comprises a mobile ground station.

183. (Previously added) The space-based server network architecture of claim 181, wherein at least one of the plurality of earth stations comprises a fixed-location ground station.

184. (Previously added) The space-based server network architecture of claim 181, wherein at least one of the plurality of earth stations comprises a sea-based platform.

185. (Previously added) The space-based server network architecture of claim 181, wherein at least one of the plurality of earth stations comprises an airborne platform.